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ABSTRACT

This paper reports on two studies based on classroom use of episode materials developed by Sociological Resources for the Social Studies (SRSS). The 2-week episodes are intended to introduce a sociological perspective into existing social studies courses. The studies were designed to explore the relationship, if any, between the amount of formal teacher preparation in sociology (i.e., the number of hours of exposure to preservice and inservice instruction in the discipline) and the effectiveness of the episode materials in promoting student learning. Both studies indicate "very little difference in student performance, when controlled for ability level, regardless of the level of teacher preparation in sociology." Among the possible conclusions suggested by the comparative studies are: "the materials produced by the SRSS project can be as effectively taught by teachers with considerable sociology and no special training as by teachers with considerable sociology and special training" (i.e., they are "teacher-proof materials"); the effects of special training and preparation in subject matter and methods cannot be measured in terms of student performance on objective, cognitive tests"; and "the national evaluation scheme of the SRSS project straightjacketed all teachers to such an extent that differences in preparation could not affect the results." (Author/JS)

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STUDENT LEARNINGS FROM SOCIOLOGY PROJECT MATERIALS ACCORDING TO TEACHER PREPARATION IN SOCIOLOGY

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In the world of social studies curriculum projects confidence and fear are competing emotions--confidence that the new materials are far superior to the traditional texts commonly used, fearful because these efforts may become exercises in futility. Their fate lies with the teachers who will ultimately present the new packages to students. Why should projects fear what teachers will do? The real reason may be a simple manifestation of the so-called "campus chasm" between the social science departments and schools of education. Or it may stem from pride of authorship; if the materials are so new--so different, can a teacher not involved in their development do justice to them? Or this fear may be based on the assumption that existing materials suffer a dearth of "solid subject matter." (To teach the new project materials places excessive demands on teachers with little preparation. These teachers have been able to avoid this problem with the skimpy traditional treatments.) There is some evidence that high school sociology textbooks have this shortcoming.[1] And teachers of sociology are probably less-prepared in their subject than teachers of the more established disciplines.[2]

To correct this deficiency, whether imagined or real, efforts have been made to encourage more and more summer institutes, in-service institutes, local workshops, etc. The assumption is clear: improving teacher preparation increases student learning. To improve teacher preparation means to increase the number of hours of exposure to college instruction in the discipline. The increasing number of in-service opportunities is designed to implement this assumption. Projects

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encourage these efforts because, if teachers are as unprepared as some reformers think they are, the only alternative is to develop "teacher proof" materials. Some projects may have adopted this strategy. None will admit it so none can be identified.

It could be argued that teachers with little subject matter preparation compensate for this deficiency by superior pedagogical skills. When the projects emphasize inquiry, and state that their materials stress the process of knowledge acquisition rather than the recall of fact, the "skilled" teacher may be more effective than the "knowledgeable" one. But most social scientists would probably agree that teachers with a strong background in social science will probably pass on more cognitive learning, especially lower-level factual recall of content, than will teachers with meager preparation.[3] This paper tests that proposition.

Sociological Resources for the Social Studies is a curriculum project sponsored by the American Sociological Association and funded by the National Science Foundation. Since 1964 it has been at work producing short (two-week) units, called episodes, which emphasize a sociological perspective and which are intended for use in existing social studies courses.[4] From February of 1967 through June of 1969 eighteen of these episodes were taught in varying numbers to 13,315 students by 518 teachers in twenty-two states. Because of the national scope of this evaluation and the emphasis on sociology this comparison of teacher preparation and student performance was developed. Numbers in some cells were so small that tests of significance could not be applied.

TEST POPULATION

Although a stratified random sample of classes was sought, the number of substitutions and withdrawals eliminated that possibility. The population was, however, well-balanced in terms of socio-economic level, geographic distribution, verbal ability level, and educational aspiration of students. Types of schools included

rural, small urban, suburban, and metropolitan. No private schools tested the episodes, and nearly all students were 11th or 12th graders. In each school only one class was permitted to evaluate a particular episode. Because schools exercised autonomy in selecting classes for the evaluation, several episodes which appeared to be more difficult were under-represented by lower-ability students. Eight episodes were evaluated from February to June, 1967, four from October to May, 1968, and six from October to May, 1969.

The purpose of the study was to evaluate student performance on the episodes. No attempt was made to secure a sample of teachers representing various levels of preparation. Participating teachers were asked to complete a questionnaire which included a question about their preparation in sociology. Table One provides details on the size of the test population.

TABLE ONE

NUMBER OF CLASSES WHICH STUDIED EIGHTEEN UNITS IN SOCIOLOGY, 1967-69

MEAN VERBAL ABILITY LEVEL OF CLASSES (in centile rank for 12th grade)	PRETEST[1]		POSTTEST[2]	
	Classes	Students	Classes	Students
75 and above	74	1690	57	1451
50 - 74	228	6246	189	5278
30 - 49	134	3502	106	2823
below 30	82	1877	54	1223
TOTAL	518	13,315	406	10,775

[1] Pretest figures include all classes which completed The Psychological Corporation's Standardized Verbal Abilities Test.

[2] Posttest figures include only those classes for which data on teacher preparation was available.

METHOD

Every student who studied an episode also completed a standardized verbal abilities test developed by The Psychological Corporation. Since many classes were of mixed abilities, mean verbal ability scores were obtained for each class. Classes were then assigned to the appropriate quartile. The division of classes is seen in Table One. In addition to the Verbal Abilities Test, a thirty-five item multiple-choice test was administered to both stimulus and control groups. Although some attempt was made to include test questions which measured critical thinking abilities or important concepts of sociology, almost all questions referred to specific sociological content mentioned in the episode. Episodes were matched so that students serving as the control group for one episode served as the stimulus group for another. Thus the same test was used for pre- and post- measures, but administered to different classes. From these pre- and posttest scores class norms were derived. For each of the four ability levels class pretest norms were multiplied by the number of students in the class, and the result divided by the total number of students at that ability level. This created a mean pretest score for each of the four ability levels.

Teacher preparation in sociology was the most difficult factor to retrieve from the evaluation data. Several teachers failed to return a questionnaire or failed to answer the specific question about their preparation in sociology. Questionnaires for the first eight episodes asked the teachers to check one of three categories of preparation: "less than three courses," "three or more courses," "sociology as a major." Questionnaires for the remaining ten episodes were more specific; they asked how many hours in sociology the teacher had completed. With this information teachers were sorted into three groups: "less than three courses," "three or more courses," and "sociology major or equivalent." For this study a course was considered to be three hours. Thirty or more hours were considered to be equivalent to a major in the field. Table Two shows the number and percent of teachers in each of the three categories.

This was the weakest link in the study. It was impossible to determine what types of courses teachers were reporting. Also, some teachers may have acquired over thirty hours of sociology but not elected to major in that field. Consequently, they would have been placed in the medium preparation category because they checked "three or more courses."

TABLE TWO

TEACHER PREPARATION IN SOCIOLOGY*

	N	%
Major or equivalent	25	6.16
Three or more courses	192	47.29
Less than three courses	189	46.55
TOTAL:	406	

* Based on a test population of social studies teachers in twenty-two states, February 1967-June 1969. These teachers all agreed to teach a short sociology unit in one of their classes. They may have been better prepared in the discipline than their colleagues. Although 518 teachers participated, data on preparation in sociology was supplied by only 406.

Data on teacher preparation was available for four hundred and six of the 518 participating teachers. Each of these were then assigned to one of twelve cells representing three levels of teacher preparation and cross-cut by four levels of mean verbal ability. Posttest norms for each class were multiplied by the number of students in that class and the total for each cell divided by the number of students in that cell. The pretest norm for each ability level was subtracted from the posttest norm for each cell at that level. This produced a gain for each level of teacher preparation according to mean verbal ability level of students. The appendices indicate scores and gain for each of the eighteen episodes; Table Three is a composite of all episodes. When a pretest norm for an ability level in a

particular episode was based on an N of less than three classes and/or fifty students the gain was not included in the composite.

RESULTS

Twenty-five teachers (6.16%) reported having a major or equivalent in sociology. Fifteen of these twenty-five taught classes at the second highest verbal ability level, the remaining ten being divided among the other levels. Any comparisons would, therefore, be questionable. The fact that seven of the twelve cells in Table Three had less than thirty cases indicates a lack of statistical significance. Keeping these low numbers in mind, the results show a weak positive relationship between teacher preparation and student performance.

In three of the four ability levels classes of teachers with highest preparation showed a greater gain than other classes at the same level. Classes with teachers of medium preparation level tended to show less gain than other classes. But the differences were small. Table Four provides a comparison of gain according to teacher preparation.

Classes taught by teachers at the highest preparation level showed the highest gain at every ability level but one. The greatest differences were with classes in the middle ranges of verbal ability. This finding may be attributed to the greater number of cases at those levels; the upper and lower ability levels had only two and three classes, respectfully, taught by the more prepared teachers. The second lowest gain of all twelve categories was for high ability classes taught by highly prepared teachers. But the differences were small and a larger population might change that finding.

Classes with teachers having a medium level of preparation in sociology tended to show the lowest gain. Differences between these classes and those taught by teachers with low levels of preparation were almost nil, however. The

TABLE THREE

STUDENT PERFORMANCE ON UNITS IN SOCIOLOGY
ACCORDING TO TEACHER PREPARATION IN SOCIOLOGY

MEAN VERBAL ABILITY LEVEL OF CLASS (in centile rank for 12th grade)		TEACHER PREPARATION IN SOCIOLOGY		
		Major or equivalent	Three or more courses	Less than three courses
75 and above	Episodes	2	13	16
	Classes[1]	2	26	29
	Students	30	702	719
	Gain[2]	2.28	4.67	4.45
50 - 74	Episodes	10	18	18
	Classes[1]	15	90	84
	Students	435	2464	2379
	Gain[2]	4.16	3.72	3.81
30 - 49	Episodes	4	16	16
	Classes[1]	5	54	47
	Students	165	1416	1242
	Gain[2]	6.29	2.61	2.72
below 30	Episodes	3	11	15
	Classes[1]	3	22	29
	Students	77	481	665
	Gain[2]	3.92	1.72	3.02

1 Although in three of the ability levels there were only five or fewer classes (and episodes) taught by the most-prepared teachers, these were included for comparison. This small N should be considered in any comparisons.

2 Posttest norm of classes in this cell minus pretest norm of classes for this verbal ability level.

TABLE FOUR

DIFFERENCES IN STUDENT GAIN AFTER STUDYING UNITS IN SOCIOLOGY
(BY LEVEL OF TEACHER PREPARATION IN SOCIOLOGY)

MEAN VERBAL ABILITY LEVEL OF CLASSES (in centile rank for 12th grade)	COMPARISON OF STUDENT GAIN*
	Major or equivalent compared with less than three courses
75 and above	-2.17
50 - 74	+ .35
30 - 49	+3.57
below 30	+ .90
	Major or equivalent compared with three or more courses
75 and above	-2.12
50 - 74	+ .44
30 - 49	+3.68
below 30	+2.20
	Three or more courses as compared with less than three courses
75 and above	- .05
50 - 74	- .09
30 - 49	- .11
below 30	-1.30

* Gain measured by subtracting pretest norms for verbal ability level from posttest norms for the same ability level, according to level of teacher participation.

average difference on a forty question test was .387, little more than 1/3 of a question. The fact that the medium preparation group was at every level slightly below the low preparation group suggests that a little knowledge may or may not be dangerous but it appears, in this case, to be useless. There was a general tendency toward a not surprising conclusion; the higher the verbal ability level of the class, the greater the gain. That this is true despite the teacher preparation differences suggests a number of conclusions about the wisdom of encouraging increased teacher preparation. The most important statement that can be made is simply that there was in fact very little difference in student performance when controlled for ability level regardless of the level of teacher preparation.

Classes with teachers of medium and low preparation levels showed gains in direct relation to ability level. That is, the higher the ability level the greater the gain.

CONCLUSIONS

Perhaps the episodes are nearly teacher proof. The small number of teachers at the highest preparation level, the direct relationship of student ability to student gain between classes with teachers of medium preparation level and those of minimal preparation suggest this possibility. Since every teacher knew they were evaluating experimental materials they may have attempted to follow the schedule and suggested procedures very carefully. Comments on teacher questionnaires support this suggestion. Now that some of the materials have become commercially available it may be that teachers will be more willing to experiment, deleting parts of episodes and modifying material. The question of "teacher proof" materials cannot be answered yet. But individual cases suggest the unlikelihood of this possibility.

A more reasonable conclusion is that something more than additional study in subject matter is needed to implement new curriculum materials. The sociology

presented by the project materials differs markedly from that commonly taught in undergraduate sociology courses. The pedogogical approach is also quite different. Emphasis on workshops and institutes which attempt to do nothing more than increase teacher background in sociology will likely result in little improvement in student learning on new sociology materials.

When similar findings were reported last year at the AERA meetings it was suggested that the findings were consistent with the goals of the project. That is, the episodes should be so designed as to allow almost any teacher to easily integrate them into existing courses. Because few teachers have a high level of preparation in sociology the episodes should not fare better with them. The episodes are, after all, not designed to teach sociology but to add a sociological perspective to existing courses. It was further suggested that teacher preparation in sociology might make a difference in a full semester sociology course. Recent evidence does not support this notion.

Does in-service preparation of teachers specifically oriented toward new curricular materials enhance the success of those materials in the classroom? Do teachers who have recently acquired increased levels of preparation in sociology pass on more of this knowledge to their students? Last spring the SRSS one-semester sociology course was taught by two hundred and twenty-two teachers to a like number of classes. I shall not dwell on the evaluation mechanism--that is Mr. Grahlfs' concern. His paper has given you an accurate picture of that experience. I would like to add, however, one point. There were four types of teachers involved in that evaluation: a small group which had a close working relationship with the development of the course, a larger group which knew nothing of the course before they received it, and two groups who had special training in the teaching of the course. The latter can be subdivided into those teachers who attended summer institutes and those who were enrolled in a in-service institute while they were teaching the course. No pretest was administered so a

comparison of gain is impossible. But a comparison of raw scores can offer some indication of any differences according to teacher preparation.

Classes were administered the same verbal abilities test given students who studied the episodes. Class norms were figured and the entire group was organized by quartiles. Those teachers with a close working knowledge of the course were excluded from this comparison for obvious reasons.

Three levels of teacher preparation were compared: those who attended summer institutes (48), those who attended in-service institutes (50), and those who attended no institute and had no more than five courses in sociology (35). The last group, incidentally, was composed mainly of teachers with fewer than three courses in sociology.

Table Five compares the three, controlled for ability level. In only one instance did teachers with no special training and little sociology fare differ much from their better prepared colleagues. That was at the fourth ability level; although only two classes were reported in that category, they are compared with three classes with teachers who attended summer institutes and four classes with teachers who attended in-service institutes. At that ability level there is a marked difference between the results from classes with summer institute teachers and with classes of naive teachers (nearly seven points out of fifty). With this exception the differences among the three teacher preparation groups are almost totally insignificant. For the record, at the second and third ability levels those classes whose teachers had no institute experience achieved slightly higher results on the final examination than did those classes whose teachers had attended one or the other types of institutes. And at the highest ability level classes with naive teachers still did better than classes with teachers attending on-going institutes while the course was being taught.

Put less politely, it seems that the final score on a fifty-item objective test administered at the end of a course is likely to differ very little if teachers had

TABLE FIVE

COMPARISON OF STUDENT SCORES ON A FIFTY-ITEM FINAL TEST IN SOCIOLOGY ACCORDING TO TEACHER PARTICIPATION IN SOCIOLOGY INSTITUTES

ABILITY LEVEL OF CLASSES	SUMMER INSTITUTE (48)	IN-SERVICE INSTITUTE (50)	NO INSTITUTE (35)
I			
Classes	18	13	9
Students	498	370	214
Average Score	29.45	28.26	29.17
II			
Classes	20	26	17
Students	546	999	491
Average Score	25.08	25.43	26.03
III			
Classes	7	7	7
Students	167	188	184
Average Score	21.11	21.46	22.61
IV			
Classes	3	4	2
Students	51	102	46
Average Score	23.16	19.28	26.51

acquired special training in teaching that course. At least we can say this based on our tests and those institutes centered on our materials. One could fault the institutes though I think they are probably no better or no worse than those from other disciplines. One could fault the test. I shall do neither. But I would like to point out that it might very well be that the test did not measure the learnings which the institutes prepared teachers to impart. That is a hunch--not an assertion.

There are at least three major conclusions which can be drawn from this crude comparison: the materials produced by the SRSS project can be as effectively taught by teachers with little sociology and no special training as by teachers with considerable sociology and with special training; the effects of special training and preparation in subject matter cannot be measured in terms of student performance on objective, cognitive tests; and finally that the national evaluation scheme of the SRSS project straightjacketed all teachers to such an extent that differences in preparation could not affect the results. It should be added that the division of classes into ability levels crosscut by teacher preparation levels reduces the N so much that significant statements cannot be made. Further, all conclusions reached are based on a comparison of results on a nonstandardized and never before administered examination. These disclaimers provide the author with a needed escape mechanism.

NOTES

1. In 1966 the five secondary school textbooks in sociology which were then available were analyzed. Fifteen topics which most sociologists would consider central to their discipline were considered. The percent of total subject matter pages devoted to those topics was reported for each text. A few examples: only one text gave stratification over five percent (5.1); the text having the most subject matter pages on social change accorded that topic 4.0 percent; the scientific method never received over 2.8 percent. The four topics which received the most extensive coverage in at least one of the texts were: education (20%); human ecology/population (14%); culture (13.6%); and the family (13.2%). Three of these four reported coverages were in one book. (William M. Hering, Jr., "An Analysis of the Five Secondary School Textbooks in Sociology;" Sociological Resources for the Social Studies, Ann Arbor, Michigan, 1966.)

2. The one hundred and forty-nine teachers of the first eight episodes were divided into two groups: teachers of sociology courses and teachers of non-sociology courses. 9.2 percent of the former had majored in sociology, 64.6 percent reported having three or more sociology courses, and 26.2 percent reported taking less than three courses in sociology. When further divided according to teaching experience, only 5.9 percent of the sociology teachers who had taught five or more years had majored in the field, although 21.4 percent of the less-experienced teachers had sociology majors. (William M. Hering, Jr., "Sociology and the High School: What and Why?" The Indiana Social Studies Quarterly, Ball State University, Muncie, Indiana, Vol. XX, No. 3, Winter, 1967-8, p. 7.)

3. One sociologist concerned with the fate of his discipline in the high schools wrote, "Many secondary school sociology teachers are poorly trained to teach sociology: they have been teaching history, social studies, or government for several years and may have taken on sociology when the principal wanted to add it to the curriculum as a half-year senior course. Consequently, they need help." He notes that "these observations result from interviews with high school sociology teachers. They are based upon impressions, rather than quantitative assessments..." (Abbott L. Ferriss, "Secondary Sociology Teachers," unpublished manuscript, 1968).

4. SRSS is also producing a one-semester sociology course and a number of readings in sociology for high school teachers. Specific information about all of its activities can be obtained from SRSS headquarters, 503 First National Building, Ann Arbor, Michigan 48108.

5. In a review of research on teacher preparation, Seymour Metzner of the City University of New York states, "The plain fact is that there is not a single study that, after equating for pupil intelligence and socio-economic status, has found any level of teacher preparation variable to be even peripherally related to pupil gain, let alone being of major importance in this educational outcome." (Seymour Metzner, "The Teacher Preparation Myth: The Phoenix Too Frequent," Phi Delta Kappan, Vol. L, No. 2, October, 1968, p. 106.) Support for this position can be found in Eugene Auerbach, "Liberal Arts Opposition to Professors of Education," School and Society, November 21, 1959, pp. 473-4, and Donald P. Hoyt, "College Grades and Adult Accomplishment: A Review of Research," Educational Record, Winter, 1966, pp. 70-5.